

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A surface lighting device having a light source and a light-guide-member, said light-guide-member comprising:

a light source;

a light guide member including:

an incident plane for receiving light emitted from said light source and for producing incident light;

a light-guiding-section for receiving said incident light and for producing guided lightguiding the light incident on said incident plane; and

a light-emitting-section for receiving said guided light and for producing emitted lightemitting the light travelling through said light guiding section,

wherein a length of shorter side of said light-guiding-section is not more than 8 mm, an area of said light-emitting-section is not less than 500 mm², a ratio of minimum luminance vs. maximum luminance of said light-emitting-section is not less than 0.3, an average luminance of said light-emitting-section ranges from 1 cd/m² to 200 cd/m², and a luminance change amount per unit length is not more than (average luminance) × 100 cd/m³.

2. (Original) The surface lighting device as defined in Claim 1 further comprising a barrier plate for blocking the light emitted from entering directly to said light-guide-member.

3. (Original) The surface lighting device as defined in Claim 2 wherein said barrier plate has a reflecting function.

4. (Original) The surface lighting device as defined in Claim 2 further comprising a holder for accommodating said light-guide-member, wherein said holder and said barrier plate are unitarily molded.

5. (Original) The surface lighting device as defined in Claim 2 further comprising a reflecting member for reflecting the light emitted toward outer circumference of said light-guiding-section.

6. (Original) The surface lighting device as defined in Claim 5 wherein said holder, said barrier plate and said reflecting member are unitarily molded.

7. (Original) The surface lighting device as defined in Claim 1 wherein the emitted light reflects on outer circumference of said light-guiding-section, then travels to said light-emitting-section.

8. (Original) The surface lighting device as defined in Claim 1 further comprising a light scattering layer disposed on a face opposite to said light-emitting-section.

9. (Original) The surface lighting device as defined in Claim 1 wherein said light-emitting-section has a light-scattering-member thereon.

10. (Original) The surface lighting device as defined in Claim 1 wherein a half width of a light emitting wavelength of said light source is not more than 50 nano-meter.

11. (Original) The surface lighting device as defined in Claim 1 wherein said light source is a light-emitting-diode having a cylindrical lens.

12. (Original) The surface lighting device as defined in Claim 1 wherein said light source is disposed on a corner of said light-guide-member.

13. (Original) The surface lighting device as defined in Claim 12 wherein said light-guiding-section has a reflecting face.

14. (Currently Amended) A portable terminal having a display device and a surface lighting device including a light source and light-guide-member, said light-guide-member comprising:

a display device; and

a surface lighting device comprising:

a light source;

a light guide member including:

a light inlet for receiving light from said light source and for producing received light;

a light-guiding-section for receiving said received light and for producing guided light;
and

a light-emitting-section for receiving said guided light and for producing emitted light,
wherein;

a ratio of minimum luminance of emitted light and maximum luminance of said emitted light is equal to or greater than 0.3;

an average luminance of said emitted light is in a range of 1 cd/m² to 200 cd/m², and

a change in luminance of said emitted light per unit length is less than or equal to said average luminance × 100 cd/m³,

wherein a length of shorter a side of said light-guiding-section is not more than 8 mm,
and an area of said light-emitting-section is not less than 500 mm², a ratio of minimum
luminance vs. maximum luminance of said light-emitting section is not less than 0.3, an
average luminance of said light-emitting section ranges from 1 cd/m² to 200 cd/m², and a
luminance change amount per unit length is not more than (average luminance) × 100 cd/m³.

15. (Currently Amended) A surface lighting device having a plurality of light sources
and a light-guide-member comprising:

~~a light source having a plurality of light emitting elements;~~

~~a light guide member including:~~

~~a light inlet for receiving light from said plurality of light sources and for producing received light;~~

~~a light-guiding-section for receiving said received light and for producing guided light for guiding light; and~~

~~a light-emitting-section for receiving said guided light and for producing emitted light, wherein,~~

~~a ratio of a minimum luminance of said emitted light and maximum luminance of said emitted light is equal to or greater than 0.3;~~

~~an average luminance of said emitted light is in a range of 1 cd/m² to 200 cd/m², and~~

~~a change in luminance of said emitted light per unit length is less than or equal to said average luminance × 100 cd/m³,~~

~~wherein a length of shorter a side of said light-guiding-section is not more than 8 mm, and an area of said light-emitting-section is not less than 500 mm², a ratio of minimum luminance vs. maximum luminance of said light emitting section is not less than 0.3, an average luminance of said light emitting section ranges from 1 cd/m² to 200 cd/m², and a luminance change amount per unit length is not more than (average luminance) × 100 cd/m³.~~

16. (Original) The surface lighting device as defined in Claim 15 wherein said light source is disposed on a corner of said light-guide-member, and an approximation line connecting respective emitting centers of said light emitting elements is disposed to form approximately right angles with a diagonal line of said light-guide-member.

17. (Original) The surface lighting device as defined in Claim 15 wherein said light source is disposed on a corner of said light-guide-member, and an approximation line connecting respective emitting centers of said light emitting elements is disposed to form an angle with a longer side of said light-emitting-section, said angle being greater than another angle formed by the approximation line and a shorter side of said light-emitting-section.

18. (Original) The surface lighting device as defined in Claim 15 wherein the approximation line is disposed to separate said light-emitting-section into two approximately equivalent areas.

19. (Original) The surface lighting device as defined in Claim 15, wherein the light travelling in a third direction is guided from around a center of an end face of said light-guide-member into said light-guide-member wherein a first direction runs along a main light-axis of said light source, and a second direction runs along a light axis toward said light-emitting-section from said light-guiding-section, the third direction runs in a plane other than a plane including the first and the second directions,

wherein an approximation line connecting respective emitting centers of said light-emitting-elements is disposed to be approximately parallel to the second direction.

20. (Original) The surface lighting device as defined in Claim 15, wherein said light source comprises:

an insulated substrate to be mounted with said light emitting elements;

a light-transparent member disposed on said substrate to cover said light emitting elements; and

an electrode disposed on at least an upper face of said substrate.

21. (Original) The surface lighting device as defined in Claim 15, wherein said respective light emitting elements is disposed at approximately the same distance from said light-guide-member.

22. (Original) The surface lighting device as defined in Claim 15, wherein said light emitting elements change color tones by varying electric current flowing therethrough.

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Original) A surface lighting device comprising:

a light-guide-member including:

a light-inlet;

a light-guiding-section; and
a light-emitting-section; and
a light source disposed on a corner of said light-guide-member;

wherein at least one plate of a first and a second plates, between which said light-inlet exists, approaches said light-emitting-section at a greater distance from said light source.

38. (Original) The surface lighting device as defined in Claim 37, wherein said light-inlet comprises a slanted end face of said light-guide-member and a reflecting material is disposed on said end face, and said light source is disposed under said light-inlet.

39. (Original) A surface lighting device comprising:

a light-guide-member including:
a light-inlet;
a light-guiding-section; and
a light-emitting-section; and
a light source disposed on a corner of said light-guide-member;

wherein a first side and a second side of said light-guide-member cramp a small side including said light-inlet, where a third side is opposite to the first side and a fourth side is opposite to the second side,

wherein a first intersecting point is formed by the first and second sides, and a second intersecting point is formed by the third and the fourth sides, and a line connecting the first and the second intersecting points forms an angle ranging from 75 degrees to 105 degrees with a line connecting a closer end point of the first side to said light source and a closer end point of the second side to said light source.

40. (Original) A display unit comprising:

a surface lighting device comprising:
a light-guide-member including:
a light-inlet;
a light-guiding-section; and
a light-emitting-section; and
a light source disposed on a corner of said light-guide-member,

wherein an angle formed by two planes of said light-guide-member, where said light-inlet exists between the two planes, is an acute angle,

a holder for accommodating said light-guide-member;
a liquid crystal display element;
a circuit board; and
a wiring for coupling said liquid crystal display element with said circuit substrate,

wherein said light-guide-member has a first side above which said wiring is routed, said holder has a second side on an outer frame thereof and above which said wiring is routed, and said liquid-crystal-display element has a third side from which said wiring is led out,

wherein said first side is not parallel to said second side, and said first side is approximately parallel to said third side.

41. (Original) The display unit as defined in Claim 40 wherein said surface lighting device is disposed behind said liquid crystal display elemnt.

42. (Original) The display unit as defined in Claim 40, wherein said light source is disposed on the side of said surface lighting device where said wiring is routed.

43. (Canceled)

44. (Original) A portable terminal comprising:

a surface lighting device comprising:

a light-guide-member including:

a light-inlet;

a light-guiding-section; and

a light-emitting-section; and

a light source disposed on a corner of said light-guide-member,

wherein an angle formed by two planes of said light-guide-member, where said light-inlet exists between the two planes, is an acute angle,

a holder for accommodating said light-guide-member;

a liquid crystal display element;

a circuit board; and

a wiring for coupling said liquid crystal display element with said circuit substrate,

wherein said light-guide-member has a first side above which said connector is routed, said holder has a second side on an outer frame thereof and above which said connector is

routed, and said liquid-crystal-display element has a third side from which said connector is led out,

wherein said first side is not parallel to said second side, and said first side is approximately parallel to said third side.

45. (Original) A surface lighting device comprising:

a light-guide-member including;

a light-inlet;

a light-guiding-section;

a light-emitting-section;

a light source disposed on a corner of said light-guide-member; and

a light-reflecting-and-diffusion-section having a light-scattering-section and a smooth section at least one of faces of said light-emitting-section,

wherein a rate of an area occupied by the light-scattering-section on said light-reflecting-and-diffusion-section is uneven.

46. (Original) The surface lighting device as defined in Claim 45 further comprising a reflecting layer adjacent to the light-scattering-section.

47. (Original) The surface lighting device as defined in Claim 45, wherein the area occupied by the light-scattering-section on said light-reflecting-and-diffusion-section increases at a greater distance from diagonal line of said light-reflecting-and-diffusion-section.

48. (Original) The surface lighting device as defined in Claim 45, wherein the area occupied by the light-scattering-section increases at a greater distance from said light source.

49. (Original) The surface lighting device as defined in Claim 45, wherein the area occupied by the light-scattering-section increases at a greater distance from an optical center axis of said light source.

50. (Original) The surface lighting device as defined in Claim 45, wherein the light-scattering-section is formed by printing.

51. (Original) The surface lighting device as defined in Claim 45, wherein the light-scattering-section is formed with fine peaks and valleys.

52. (Original) A portable terminal comprising:

a display unit;

a surface lighting device including;

a light-guide-member including;

a light-inlet;
a light-guiding-section;

a light-emitting-section; and

a light source disposed on a corner of said light-guide-member; and

a light-reflecting-and-diffusion-section having a light-scattering-section and a smooth section at least one of faces of said light-emitting-section,

wherein a rate of an area occupied by the light-scattering-section on said light-reflecting-and-diffusion-section is uneven.

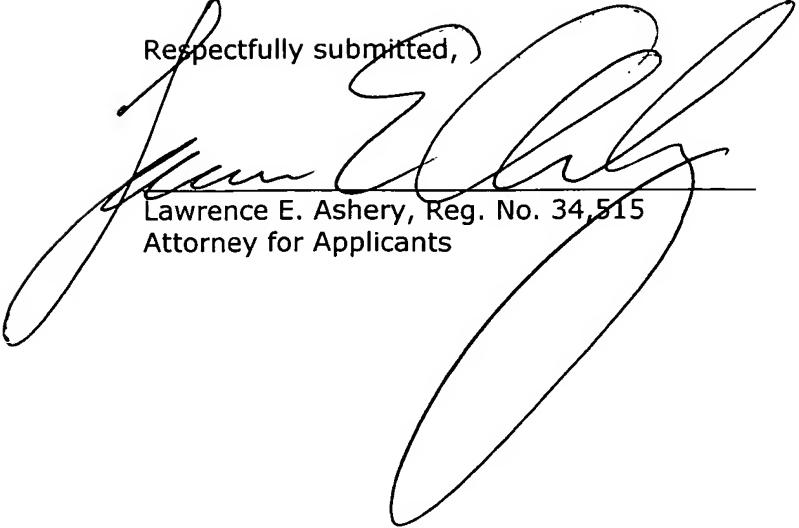
53. (New) The device according to claim 14, wherein said light-guiding-section has a length equal to or less than 8 mm.

54. (New) The device according to claim 14, wherein said light-emitting section has an area greater than or equal to 500 mm².

55. (New) The device according to claim 15, wherein said light-guiding-section has a length equal to or less than 8 mm.

56. (New) The device according to claim 15, wherein said light-emitting section has an area greater than or equal to 500 mm².

Respectfully submitted,


Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicants

LEA/dlm

Dated: March 17, 2004

P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

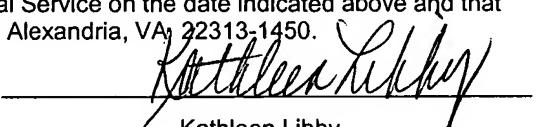
The Commissioner for Patents is hereby
authorized to charge payment to Deposit
Account No. 18-0350 of any fees associated
with this communication.

EXPRESS MAIL

Mailing Label Number: EL 985027235 US

Date of Deposit: March 17, 2004

I hereby certify that this paper and fee are being deposited, under 37 C.F.R. § 1.10 and with sufficient postage, using the "Express Mail Post Office to Addressee" service of the United States Postal Service on the date indicated above and that the deposit is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450.


Kathleen Libby